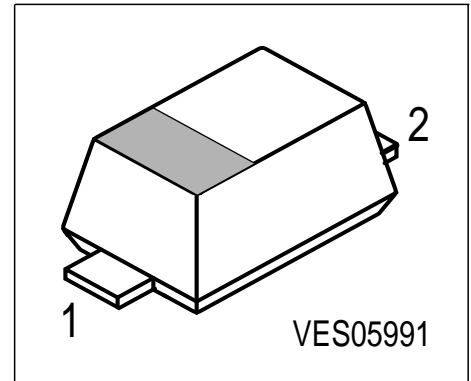


**Silicon Tuning Diode**

- For UHF-TV-tuners
- High capacitance ratio
- Low series inductance
- Low series resistance
- Extremely small plastic SMD package
- Excellent uniformity and matching due to "in-line" matching assembly procedure



Type	Marking	Pin Configuration			Package
		1 = C	2 = A	-	
BB555-02V inline matched	BB	1 = C	2 = A	-	SC79
BB555-02V unmatched	BB	1 = C	2 = A	-	SC79

**Maximum Ratings**

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	30	V
Peak reverse voltage- $R \geq 5k\Omega$	$V_{RM}$	35	
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 150	°C
Storage temperature	$T_{stg}$	-55 ... 150	

**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

**DC Characteristics**

Parameter	Symbol	min.	typ.	max.	Unit
Reverse current	$I_R$	-	-	10	nA
$V_R = 30\text{ V}$		-	-	200	
$V_R = 30\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	

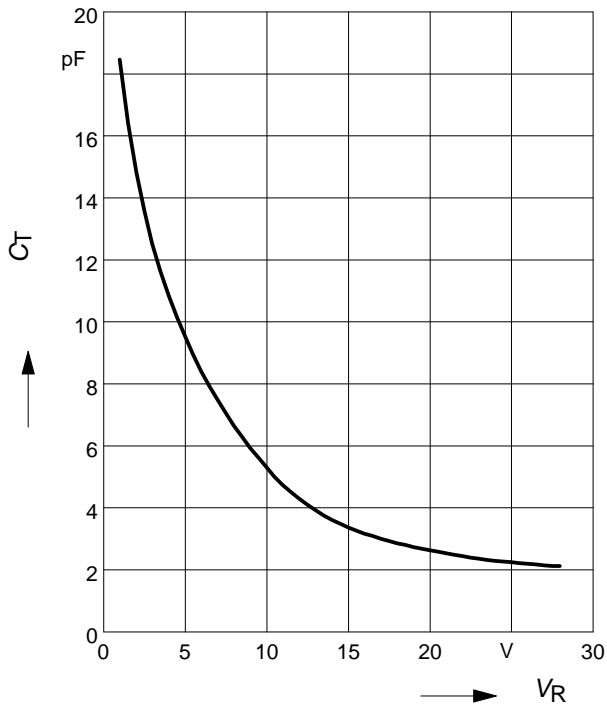
**AC Characteristics**

Diode capacitance- $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ $V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_T$	17.5 14.01 2.05 1.9	18.7 15 2.24 2.1	20 16.1 2.4 2.3	pF
Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_{T1}/C_{T28}$	8.2	8.9	9.8	-
Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	$C_{T2}/C_{T25}$	6	6.7	7.5	-
Capacitance matching <sup>1)</sup> $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz},$ <b>4 diodes sequence</b> $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz},$ <b>7 diodes sequence</b>	$\Delta C_T/C_T$	- -	0.15 0.25	1 2	%
Series resistance $V_R = 3\text{ V}, f = 470\text{ MHz}$	$r_S$	-	0.58	-	$\Omega$
Series inductance	$L_S$	-	0.6	-	nH

<sup>1</sup>In-line matching. For details please refer to Application Note 047

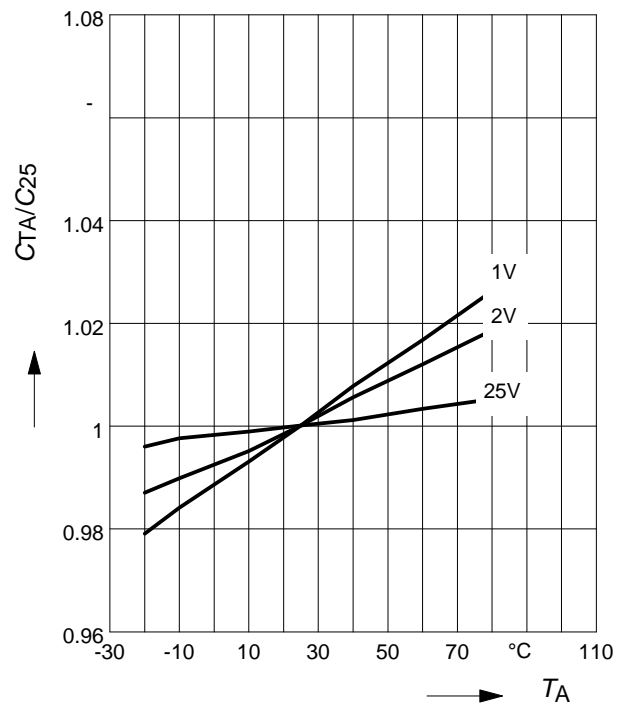
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

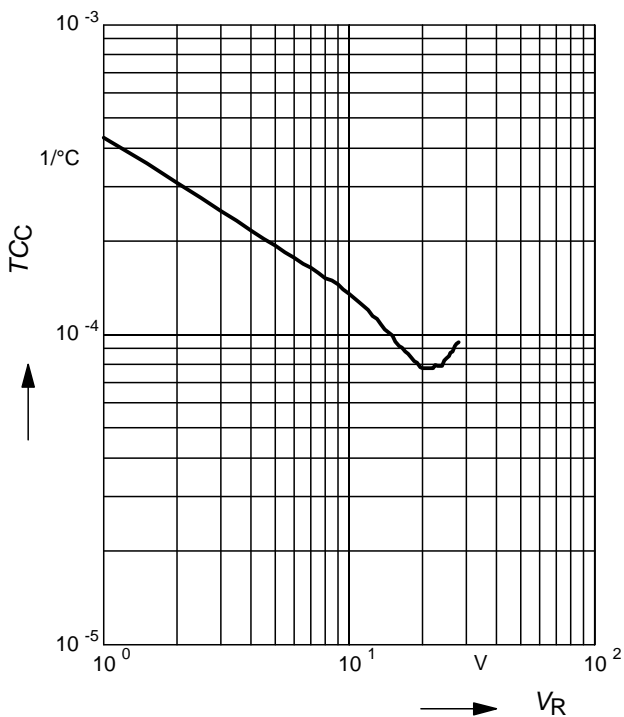


**Normalized diode capacitance**

$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A); f = 1\text{MHz}$

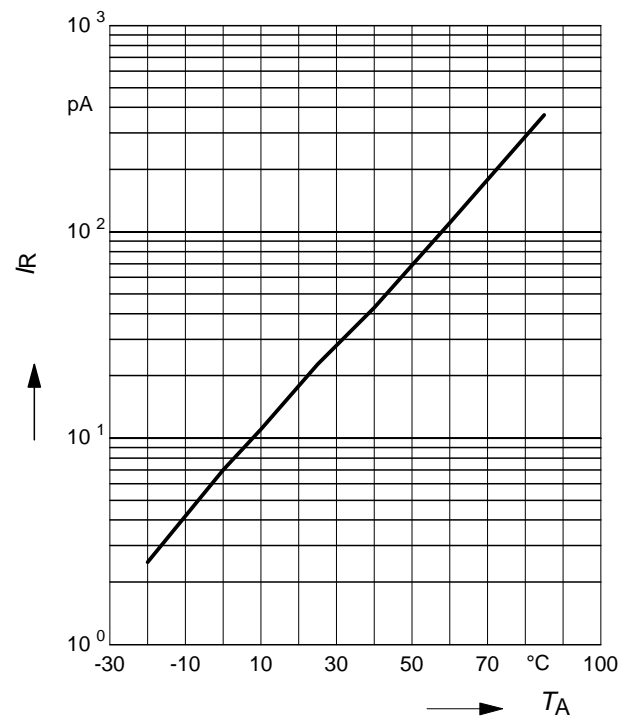


**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**



**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{V}$



Reverse current  $I_R = f(V_R)$

$T_A =$  Parameter

